

A Framework for Assessing Distribution and Abundance of Stream-dwelling Bull Trout

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Effective conservation and restoration strategies require reliable approaches for assessing the distribution and abundance of stream-dwelling fishes. The probability of detecting fish depends on the capture efficiency of the selected method (ability to capture fish) and the abundance of fish (number of chances). As a result, detection can be estimated for any method provided estimates of abundance and capture probabilities are available. Here we describe results of research to estimate detection probabilities by modeling sampling efficiencies of commonly used methods for sampling stream-dwelling bull trout. We demonstrate how detection probabilities can be applied to estimate required sample sizes, interpret observed absences (zero catches), and how this information can be incorporated into decision-making and adaptive management.

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